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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
APPLICATION FOR LETTERS PATENT

INVENTOR:

Clive Lu

TITLE:

DECORATIVE GRIP AND METHOD FOR MANUFACTURE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to decorative grips and a method for manufacturing the decorative grips. More particularly, the invention relates to transparent, decorative grips including a three-dimensional design within the grip, the design being created through the application of laser energy to a transparent grip blank.

2. Description of the Prior Art

As molding techniques have improved over the years, manufacturers have begun to develop a variety of molded grips/handles for use with sporting implements, tools and appliances. These grips/handles take a variety of forms and manufacturers are consistently attempting to distinguish themselves within the marketplace by providing grips and/or handles different from those of their competitors. As such, various techniques and apparatuses for use in the manufacture of decorative and distinguishable grips/handles have been developed.

With this in mind, a need continues to exist for improved grips and/or handles, as well as a method for manufacturing the grips and/or handles. The present invention provides such a grip/handle as well as a method for manufacturing the grip/handle.

SUMMARY OF THE INVENTION

It is, therefore, an object of the present invention to provide a grip including a transparent polymeric body having an inner surface and an outer surface. A design is formed within the body and between the inner surface and the outer surface of the body.

It is also an object of the present invention to provide a grip wherein the design is three-dimensional.

It is another object of the present invention to provide a grip wherein the grip is shaped and dimensioned for attachment to a shaft of a golf club.

It is a further object of the present invention to provide a grip wherein the grip is substantially cylindrical.

It is also another object of the present invention to provide a grip wherein the grip includes a first end and a second end, the first end being closed and the second end being open for attachment to an article.

It is still another object of the present invention to provide a method for forming a decorative grip. The method is achieved by forming a transparent polymeric body shaped and dimensioned for attachment to an article and for gripping by an individual and applying laser energy to the body in a manner forming a design within the polymeric body, wherein the design is formed between an inner surface and an outer surface of the polymeric body.

It is yet a further object of the present invention to provide a method for forming a grip wherein the laser energy is applied in the form of a Nd: YAG laser.

It is also an object of the present invention to provide a method for forming a grip wherein the laser energy forms a three-dimensional design within the body.

It is another object of the present invention to provide a method for forming a grip including the step of securing the grip to an article.

Other objects and advantages of the present invention will become apparent from the following detailed description when viewed in conjunction with the accompanying drawings, which set forth certain embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of a golf grip in accordance with the present invention.

Figure 2 is a cross sectional view along the line II-II in Figure 1.

Figure 3 is a schematic showing engraving of a grip in accordance with the present invention.

Figure 4 is a cross sectional view of a grip in accordance with an alternate embodiment of the present invention.

Figure 5 is a perspective view of the present grip with an LED cap member secured thereto.

Figure 6 is a top view of the cap member shown in Figure 5.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The detailed embodiment of the present invention is disclosed herein. It should be understood, however, that the disclosed embodiment is merely exemplary of the invention, which may be embodied in various forms. Therefore, the details disclosed herein are not to be interpreted as limiting, but merely as the basis for the claims and as a basis for teaching one skilled in the art how to make and/or use the invention.

With reference to Figures 1 and 2, a decorative grip 10 in accordance with the present invention is disclosed. Although the term “grip” is used throughout the present specification, those skilled in the art will appreciate that the invention is not limited to grips per se, but may be employed with a variety of structures shaped and dimensioned for gripping by the user of the implement to which the structure is secured.

The grip 10 in accordance with a preferred embodiment of the present invention is designed for use in conjunction with a golf club 12. However, those skilled in the art will appreciate that the principles of the present invention may be applied in the manufacture of grips for various purposes without departing from the spirit of the present invention. For example, the concepts of the present invention may be applied in the manufacture of tennis grips, racquetball grips, squash grips, hammer handles, appliance handles, tool handles, etc.

The grip 10 includes a body 14 of transparent polymeric material. Those skilled in the art will appreciate that grips may be formed from a variety of polymeric materials depending upon the needs of the particular activity, and it is the intention of the present invention not to limit the scope of the invention to particular materials. The grip 10 is shaped and dimensioned for its particular purpose. As such, the grip 10 disclosed in accordance with a preferred embodiment of the present

invention is shaped and dimensioned for attachment to the shaft 16 of a conventional golf club 12. The body 14 is substantially cylindrical and includes an inner surface 18 and an outer surface 20 with a first end 22 and a second end 24. The first end 22 is substantially closed and constitutes the butt end of the grip 10, while the second end 24 is substantially open permitting the grip 10 to be slid over the golf shaft 16 during assembly of the golf club 12.

The body 14 of the grip 10 includes a three-dimensional design 26 formed between the inner surface 18 and the outer surface 20 of the body 14. The design 26 may take any aesthetically desirable form and the invention is not limited to specific designs. In fact, the design 26 is only limited by the imagination of the individual programming the laser used in the creation of the design. As briefly mentioned above, the design 26 is formed between the inner surface 18 and the outer surface 20 of the body 14, creating the appearance that the design 26 is trapped between the two surfaces 18, 20. In fact, by controlling the energy of the laser in a manner that will be discussed below in greater detail, the design 26 is formed with depth creating a three-dimensional effect offering an aesthetically desirable image.

More specifically, and with reference to Figure 3, it is shown how the three-dimensional design 26 is created by the application of laser energy 28 to a blank transparent body 14 (which will later be utilized as the grip discussed above). By controlling the application of laser energy 28, the depth of the design 26 formed within the body 14 is controlled in a highly accurate manner.

Briefly, the decorative grip 10 is formed by a method comprising the steps of forming a transparent polymeric body 14 shaped and dimensioned for attachment to an article 12 and for gripping by an individual and applying laser energy 28 to the body 14 in a manner forming a design 26 within the polymeric body 14, wherein the design 26 is formed between the inner surface 28 and

the outer surface 30 of the transparent polymeric body 14. In accordance with a preferred embodiment, the laser energy 28 is applied in the form of a Nd: YAG laser and the laser energy 28 forms a three-dimensional design within the body 14. Although laser energy is used in accordance with a preferred embodiment of the present invention it is contemplated, other high energy sources may be employed without departing from the spirit of the present invention.

In accordance with a preferred embodiment of the present invention, a three-dimensional crystal laser inner engraving machine 32 is utilized for creating the three-dimensional images within the transparent body 14. The engraving machine 32 generally includes a Nd: YAG laser, x-y-z scanning positioning unit, electronic control system and software. Such engraving machines are well known within the industry and a variety of machines may be utilized in accordance with the present invention without departing from the spirit invention. For example, China Tool, Inc. manufactures such a device sold under the name “3-D Crystal Laser Engraving Tool”. In addition, those skilled in the art will appreciate that the operating characteristics of the laser (for example, intensity duration, etc.) will be varied depending upon the polymer chosen for the blank and the desired design.

The engraving machine 32 utilized in accordance with the present invention permits the creation of letters, logo types and real three-dimensional pictures within the transparent body 14 for the creation of a complete grip 10 and the operation of the engraving machine 32 is totally controlled through the use of a computer. As such, a user is able to define all marking specifications, including, but not limited to, the size and density of points and the position of images inside the blank transparent body 30.

Generally speaking, the laser energy 28 creates a laser focus point 34 which gasifies the polymer of the transparent body 14 by creating high temperatures therein. This process changes the

appearance of the polymer at the focus point 34. By creating many of these focus points 34, a design 26 is produced within the transparent body 14. The focus points 34 are created at different depths to create the three-dimensional effect. The desired patterns may be input to the system utilizing a variety of currently available design software, including, but not limited to, 3DMAX, AUTOCAD R14, PHOTOSHOP, etc.

Engravers of this type are highly dependable, provide long continuous working times and offer high engraving speeds. In addition, they operate with a variety of graphic functions and provide software that may be used to make a variety of patterns. In addition, the engravers offer non-contact processing, maintaining the transparent body 14 in a highly desirable condition.

In accordance with yet a further embodiment of the present invention, and with reference to Figure 4, it is contemplated that the entire grip 110 need not be formed from a transparent material. Rather the grip may be formed with an inner layer 136 of an opaque material and an outer layer (or transparent body) 138 formed from a transparent material. As with the prior embodiment, the outer layer 138 includes inner and outer surfaces 118, 120 between which the design 126 is formed. The thickness of the relative inner and outer layers 136, 138 may be varied to suit the specifically aesthetic demands of the design one wishes to form within the grip.

With reference to Figures 5 and 6, the grip 10 may further be provided with a cap member 40 including LEDs 42 to enhance the appearance of the design 26 formed within the grip 10. In particular, the cap member 40 is adapted for selective attachment to the first end 18 of the body 14 via a screw mechanism or other attachment technique (not shown). The cap member 40 is secured such that the plurality of LEDs 42 are mounted for directing light downwardly within the transparent body 14.

The cap member 40 is a self-contained device including the LEDs 42 and a power source 44 for powering the LEDs 42. As those skilled in the art will certainly appreciate, activation of the LEDs 42 may be achieved using a variety of switches 46 without departing from the spirit of the present invention.

In practice, the LEDs 42 direct light downwardly within the transparent body 14. The light will pass freely through the transparent material but hit the design 26 scattering light for viewing externally of the grip 10.

While the preferred embodiments have been shown and described, it will be understood that there is no intent to limit the invention by such disclosure, but rather, is intended to cover all modifications and alternate constructions falling within the spirit and scope of the invention as defined in the appended claims.